

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

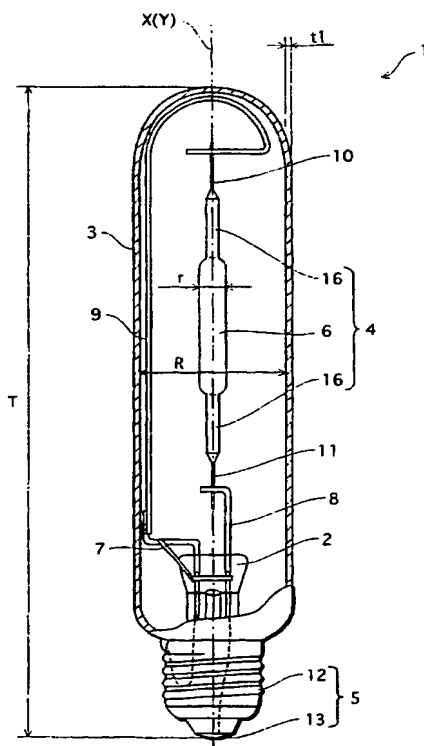
PCT

(10) International Publication Number
WO 2005/062341 A2

- (51) International Patent Classification⁷: H01J 61/00 (72) Inventors; and
(21) International Application Number: PCT/JP2004/019478 (75) Inventors/Applicants (for US only): KAKISAKA, Shunsuke. NOHARA, Hiroshi. UTSUBO, Atsushi. KANAZAWA, Yukiya.
(22) International Filing Date: 20 December 2004 (20.12.2004) (74) Agents: NAKAJIMA, Shiro et al.; 6F, Yodogawa 5-Bankan, 2-1, Toyosaki 3-chome, Kita-ku, Osaka-shi, Osaka 5310072 (JP).
(25) Filing Language: English (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
(26) Publication Language: English
(30) Priority Data: 2003-424169 22 December 2003 (22.12.2003) JP
(71) Applicant (for all designated States except US): MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. [JP/JP]; 1006, Oaza Kadoma, Kadoma-shi, Osaka 5718501 (JP). (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METAL HALIDE LAMP AND LUMINAIRE



(57) Abstract: The present invention aims at providing a metal halide lamp having a configuration to achieve the following goals: to prevent the lamp from burning out during the life due to a rise in lamp voltage; and to obtain high luminous efficiency at the same time. The metal halide lamp 1 comprises: an arc tube 4 made of translucent ceramic and having a main tube part 6 in which a pair of electrodes 14 is disposed; and an outer tube 3 housing the arc tube 4 therein. $4.0 \leq L/D \leq 10.0$, where L (mm) is a length of a space between the electrodes 14 and D (mm) is an internal diameter of the main tube part 6. $R/r \geq 3.4$, where R (mm) is an internal diameter of the outer tube 3 and r (mm) is an external diameter in the main tube part 6 of the arc tube 4, within a region positionally corresponding to, in a radial direction of the outer tube and the arc tube, the space between the electrodes 14, on a cross-sectional surface where an outer circumference of the arc tube 4 comes closest to an inner circumference of the outer tube 3. $M \leq 4.0$, where M (mg/cc) is a density of mercury enclosed in the arc tube 4.

WO 2005/062341 A2



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.